0015

OK

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DIVISION OF OIL, GAS AND MINING

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July 7, 2001

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor DRH

FROM: James D. Smith, Senior Reclamation Specialist JDS

RE: 2000 Fourth Quarter Water Monitoring, Energy West Mining Company, Trail Mountain Mine, C/015/009-WQ00-4

1. Were data submitted for all of the MRP required sites? YES [X] NO [ ]
Identify sites not monitored and reason why, if known:

October and November data were submitted on paper: December data were submitted electronically.

SW-1 frozen in December;
T-15 and T-16 dry.

2. On what date does the MRP require a five-year resampling of baseline water data.
See Technical Directive 004 for baseline resampling requirements. Consider the five-year baseline resubmittal when responding to question one above. Indicate if the MRP does not have such a requirement.

Resampling Due Date

Renewal submittal due 10/21/04, renewal due 02/21/05. Baseline analyses were performed in 1996 and will be repeated every 5 years, i.e., next baseline analyses will be in 2001.

3. Were all required parameters reported for each site? YES [X] NO [ ]
Comments, including identity of monitoring site:

4. Were irregularities found in the data? YES [X] NO [ ]

Comments, including identity of monitoring site:

SW-2: field specific conductivity (number of samples, n = 105), lab specific conductivity (n = 80), TDS (n = 109), bicarbonate (n = 91), total hardness (n = 42), total cations (n = 68), and total alkalinity (n = 87) outside two standard deviation range; total hardness below the previous minimum value recorded in the APPX database;
SW-3: bicarbonate (n = 100) and total alkalinity (n = 96) outside two standard deviation range;
18-3-1 (T-19): bicarbonate (n = 100), sulfate (n = 42), Na (n = 15), and Mg (n = 15) outside two standard deviation range; Na and Mg exceed the previous maximum value recorded in the APPX database;
October (monthly operational) - UPDES 040003-001: K (n = 26) and lab pH (n = 26) below previous minimum value recorded in the APPX database; flow (n = 120) outside two standard deviation range; sulfate (n = 26) and total anions (n = 26) outside two standard deviation range and below previous minimum value recorded in the APPX database. The total anion value appears incorrect – the lab reported anion-cation balance as –3.7 %, but the reported total anion value would give a balance of +60.3 %;
September (monthly operational) - UPDES 040003-002: Flow (n = 132) outside two standard deviation range;
October (monthly operational) - UPDES 040003-002: acidity (n = 0) outside two standard deviation range and exceeeds previous maximum value recorded in the APPX database; Flow (n = 132) outside two standard deviation range;
December (monthly operational) - UPDES 040003-002: Na (n = 36) outside two standard deviation range;
T-6 (18-2-1): acidity (n = 3) outside two standard deviation range and exceeds previous maximum value recorded in the APPX database; TDS (n = 37) outside two standard deviation range;
T-8 (TM-21 or 17-21-1): acidity (n = 2) outside two standard deviation range and exceeds previous maximum value recorded in the APPX database;
T-9 (TM-22 or 17-22-1): acidity (n = 0) outside two standard deviation range and exceeds previous maximum value recorded in the APPX database;
T-10 (17-26-4): acidity (n = 1) outside two standard deviation range and exceeds previous maximum value recorded in the APPX database;
T-14 (17-25-1): acidity (n = 2), bicarbonate (n = 15), total alkalinity (n = 15), total anions (n = 15), total iron (n = 7), and Na (n = 6) outside two standard deviation range and exceeds previous maximum value recorded in the APPX database. A note on the lab-report sheet attributes the cation-anion balance of –50.5 % to extreme amount of mud in the sample. This would also apply to other extreme values reported. Permittee needs to exercise greater caution in collecting samples;
TM-1B: depth (n = 32) outside two standard deviation range and exceeds previous maximum value recorded in the APPX database.

5. Were DMR forms submitted for all required sites?

1st month, YES [X] NO [ ]
2nd month, YES [X] NO [ ]
Identify sites and months not monitored: 3rd month, YES [X] NO [ ]

6. Were all required DMR parameters reported? YES [X] NO [ ]
Comments, including identity of monitoring site:

7. Were irregularities found in the DMR data? YES [X] NO [ ]
Comments, including identity of monitoring site:

At 002A:

Average and Maximum Flows for December are below the minimum value recorded in the APPX database (n = 6);
Maximum and Minimum pH for October exceed the maximum value recorded in the APPX database (n = 6);
Total Iron Daily Max for November exceeds the maximum value recorded in the APPX database (n = 6);
TDS Daily Max for October, November, and December falls below the minimum value recorded in the APPX database (n = 6).

8. Based on your review, what further actions, if any, do you recommend?

The numerous anomalous values in this set of samples indicates poor sample collection and handling techniques, poor lab technique, or both. The Permittee needs to collect and handle samples and monitor lab work with greater diligence. **Acidity is not a required parameter for operational monitoring.**